

Customer No.: 31561  
Application No.: 10/709,717  
Docket No.: 13004-US-PA

### REMARKS

#### Present Status of the Application

The Office Action rejected all presently-pending claims 1-5 and 18-20. Specifically, the Office Action rejected claims 1-5 and 18-20 under 35 U.S.C. 102(b) as being anticipated by Silverbrook et al (US 6,299,290). The Office Action also objected the Abstract because of the term "comprises". Applicant has amended claims 1 and 18. Further, Applicant has changed the term "comprises" to --includes--. After entry of the foregoing amendments, claims 1-5 and 18-20 remain pending in the present application, and reconsideration of those claims is respectfully requested.

#### Discussion of Office Action Objection

##### Specification

The Abstract was objected because of the term "comprises".

In response thereto, the term "comprises" in the abstract has been changed to --includes--.

#### Discussion of Office Action Rejection

##### Claim Rejections – 35 U.S.C. § 102

*Claims 1-5 and 18-20 were rejected under 35 U.S.C. 102(b) as being anticipated by Silverbrook et al (US 6,299,290).*

The Applicant has carefully considered the remarks set forth in the Office Action.

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Claim 1 has been amended to provide more descriptions for clarification purposes, according to the present invention. Supporting grounds for this amendment can be found at least in figure 3A and the related descriptions in the specification.

Independent claim 1 recites the features as follows:

1. A fluid ejection device suitable for an ink-jet printer, comprising:  
a substrate, having an orifice;  
a beam, disposed over the substrate, the beam having a fixed portion  
and a cantilever portion, wherein the cantilever portion is disposed over the  
orifice; and  
an activation pad, disposed between the cantilever portion of the beam  
and the substrate, wherein the activation pad is disposed apart from the  
beam.

Silverbrook discloses a fluid ejection device (Figures 1-4) suitable for an ink-jet printer, comprising: a substrate (2); a nozzle arrangement (1) having a *nozzle rim (5)*, wherein the nozzle arrangement (1) is formed on the *substrate (2)*; and a *thermal bend actuator device (6)*, disposed over the substrate (2). The thermal bend actuator device (6) has a post (7) and a paddle (13), wherein the paddle (13) is disposed over the nozzle rim (5); and the post (7) is disposed between the paddle (13) of the thermal bend actuator device (6) and the substrate (2).

The distinctions between Silverbrook and the present application are as follows.

1. The *nozzle rim (5)* in Silverbrook is not disposed in the substrate (2). On the contrary, the orifice 306 in the present application is formed in the substrate 300.

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2. In the present application, the activation pad 304 are disposed apart from the beam 302 and on the substrate 300 having the orifice 306 in Figure 3A.

Therefore, claim 1 is submitted to be novel and unanticipated by Silverbrook and should be allowed.

Claim 18 has been amended to provide more descriptions for clarification purposes, according to the present invention. Supporting grounds for this amendment can be found at least in page 7, lines 1-4.

Independent claim 18 recites the features as follows:

18. A method of operating a fluid ejection device, comprising:  
providing the fluid ejection device of claim 1;  
providing a fluid;  
filling the fluid into the fluid ejection device;  
wherein when a voltage is applied to the activation pad resulting in a voltage difference occurring between the activation pad and the beam, the cantilever portion of the beam is pulled down from an initial position toward the orifice of the substrate for ejecting the fluid out of the orifice; and  
wherein when the voltage applied to the activation pad is removed, the cantilever portion of the beam gradually moves away from the orifice.

Silverbrook teaches the fluid ejection device including the *thermal bend actuator device* (6) which is actuated by “*thermal*”. By contrast, the specification of the present application has described that “*A voltage difference occurs between the activation pad 304 and the beam 302*”. As a result, the cantilever portion 310 of the beam 302 is pulled down

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from an initial position toward the orifice 306 for ejecting the fluid 314 out of the orifice 306." on page 7, lines 1-4. In other words, the cantilever portion 310 of the beam 302 is actuated by "*voltage difference* " in the present application. Thus, the operation principle of the present application is extremely different from that of Silverbrook, and therefore claim 18 is submitted to be novel and unanticipated by Silverbrook and should be allowed.

Consequently, reconsideration and withdrawal of these 102 rejections are respectfully requested.

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**CONCLUSION**

For at least the foregoing reasons, it is believed that the pending claims 1-5 and 18-20 are in proper condition for allowance and an action to such effect is earnestly solicited. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

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Respectfully submitted,

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